

WHAT IS CLAIMED IS:

1. A method for providing a current to a load, comprising:

selecting a current provided to the load from one of a fixed current, a constant power current, and a variable current, the variable current being based on the voltage across the load, the selecting requiring selecting one of the fixed current, the variable current, and the constant power current based on a predetermined priority, the predetermined priority requiring selection of the current that provides the lower magnitude current or limits power dissipation of a current source providing current to the load.

2. The method of claim 1, wherein selection of the constant power current causes the current source to emit a predetermined temperature.

3. The method of claim 1, wherein the predetermined priority selects the constant power source if the power dissipation of the current source exceeds a predetermined level of power dissipation.

4. A circuit for providing current to a load, the circuit comprising:

a first current loop that is adapted to provide a fixed current;

a second current loop that is adapted to provide a variable current;

a third current loop that is adapted to provide a constant power current; and

a priority circuit that receives a first signal from the first current loop which indicates the level of an available fixed current, a second signal from the second current loop which indicates the level of an available variable current, and a constant power signal from a constant power loop which indicates the level of power dissipation of a current source and selects one of the first current loop, the second current loop, and the constant power loop to provide current to the load based on a predetermined priority signal, the predetermined priority requiring selection of the current that provides the lower magnitude current or limits power dissipation of the current source.

5. The circuit of claim 4, wherein selection of the constant power current causes the current source to emit a predetermined temperature.

6. The method of claim 4, wherein the predetermined priority selects the constant power source if the power dissipation of the current source exceeds a predetermined level of power dissipation.